



Synchronization

Sridhar Chandra & Dr. Madhu Gundlapalli

FLOW

*Improving **FLOW** is the Primary Goal of Operations*



Dr. Eli Goldratt

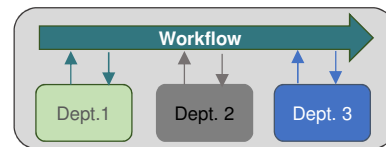
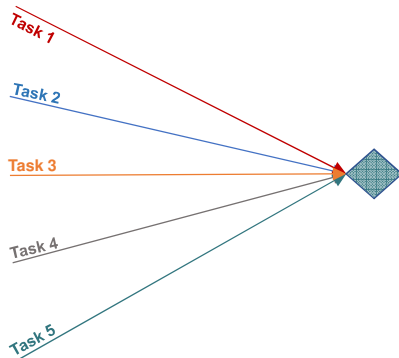


Synchronization is a Key Enabler of Flow

Situations where Synchronization is Critical

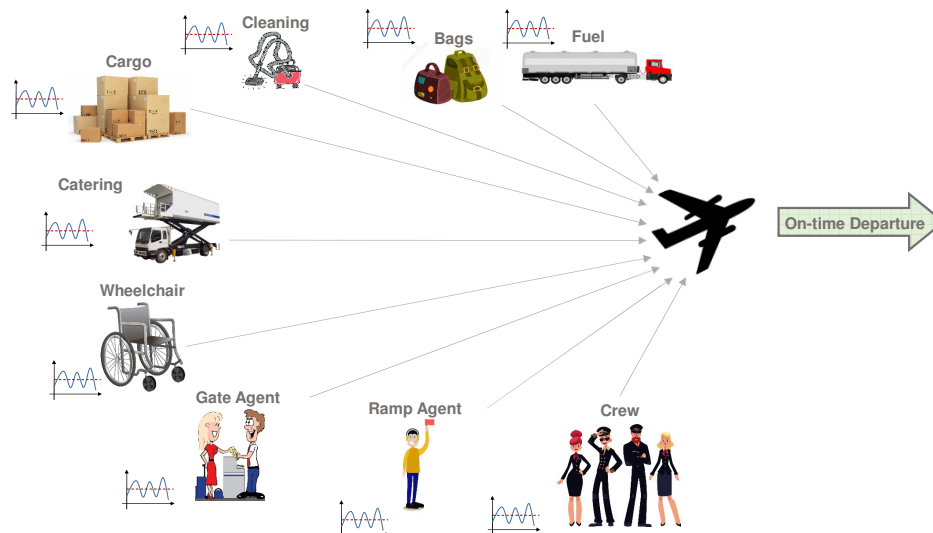
Integration Points: Multiple Inputs / activities required to achieve objective

Resource Dependencies: Multiple departments involved in the workflow



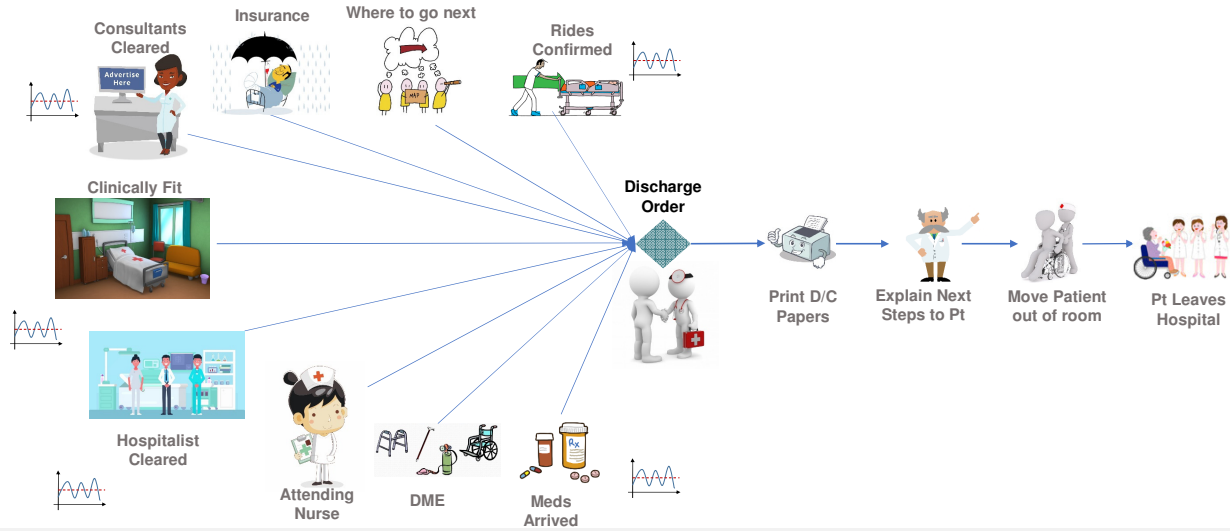
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Integration Point: Aircraft Departure



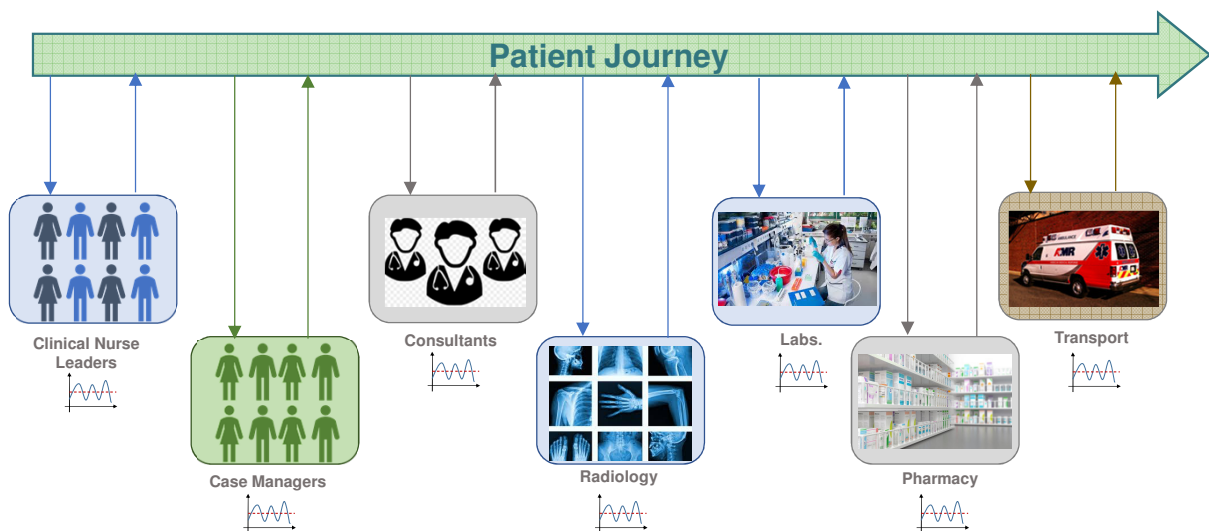
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Integration Point: Patient Discharge



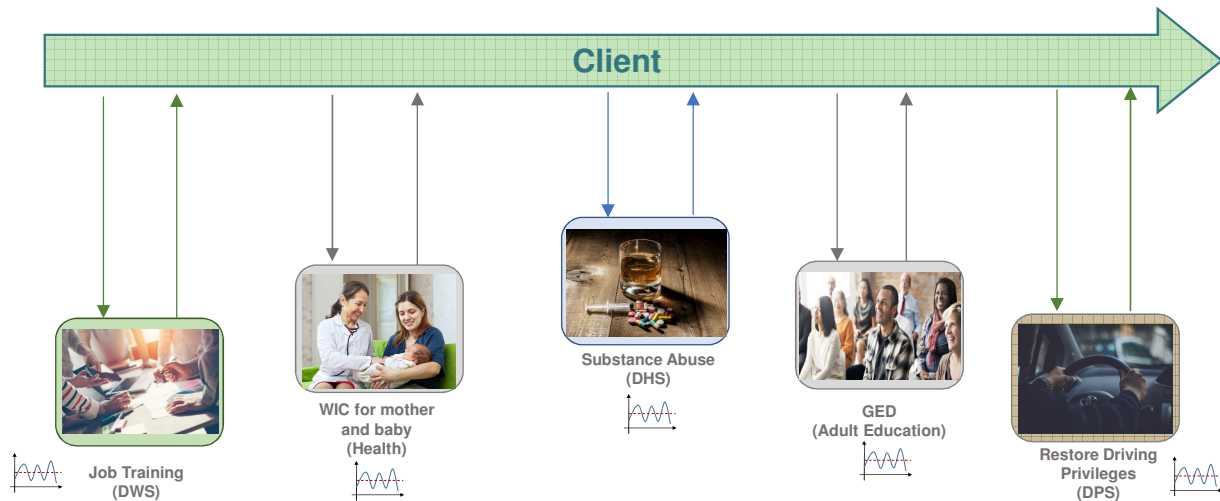
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Resource Dependency: Healthcare Example



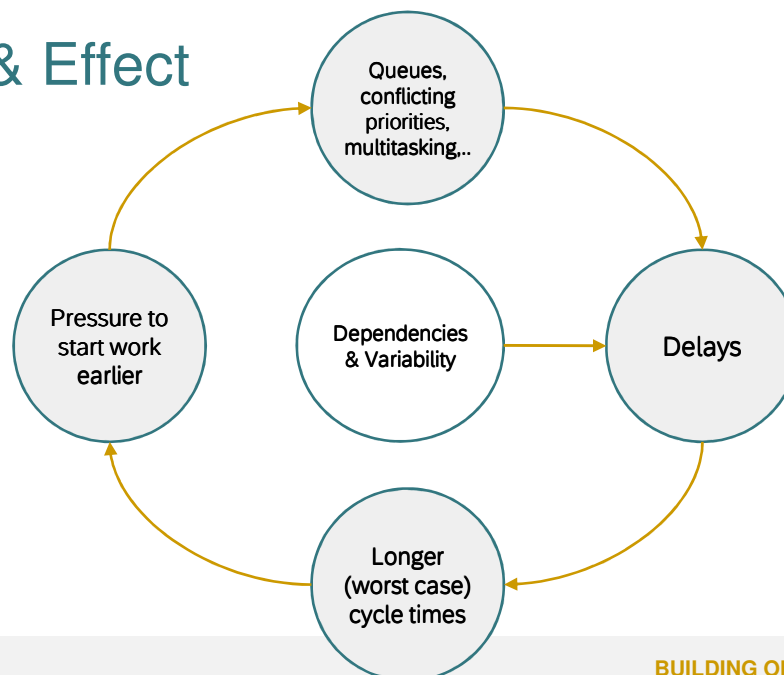
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Resource Dependency: Govt. Example



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Cause & Effect



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Exercise

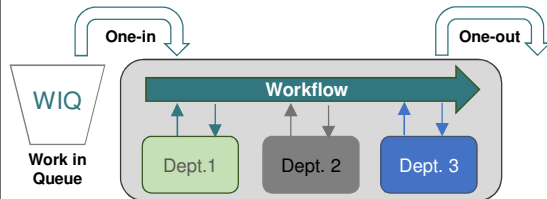
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| B | 2 | □ |
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| M | 13 | △ |
| N | 14 | □ |
| O | 15 | ○ |
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| R | 18 | ○ |
| S | 19 | △ |
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| U | 21 | ○ |
| V | 22 | △ |
| W | 23 | □ |
| X | 24 | ○ |
| Y | 25 | △ |
| Z | 26 | □ |

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| A | 1 | △ |
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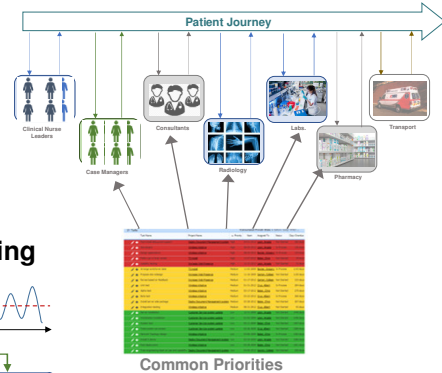
Simulation

Improving Synchronization

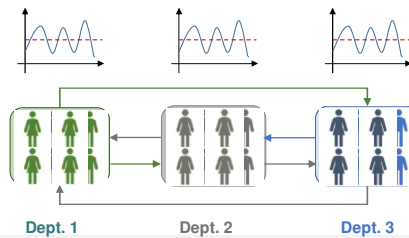
1. Work-In-Process Control



2. Global Priorities

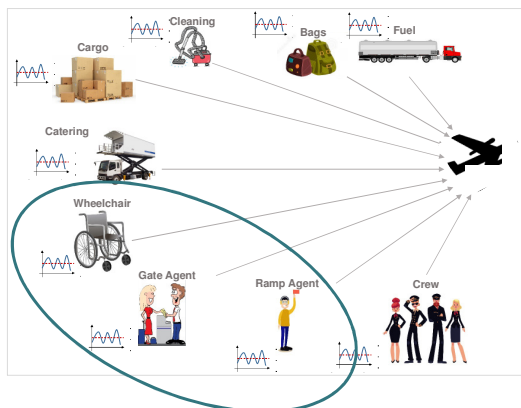


3. Resource Sharing / Pooling



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Exercise



Option 1:

Use a "real-time" tracking (IT) system to move gate agents, ramp agents & wheel chairs wherever needed

Option 2

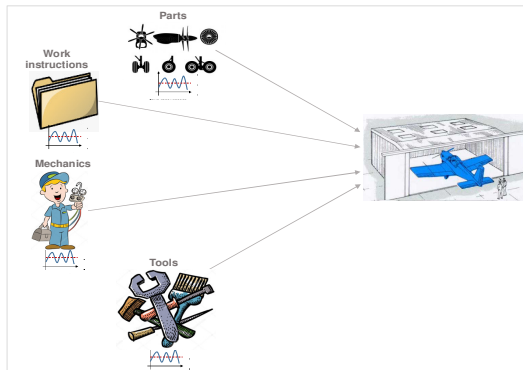
Dedicate (fully staff) gate agents, ramp agents & wheelchairs to all gates

Option 3

Dedicate (fully staff) gate agents, ramp agents & wheelchairs to some gates

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Exercise



Parts Option 1:

Day-off dispatching of parts for the missing parts

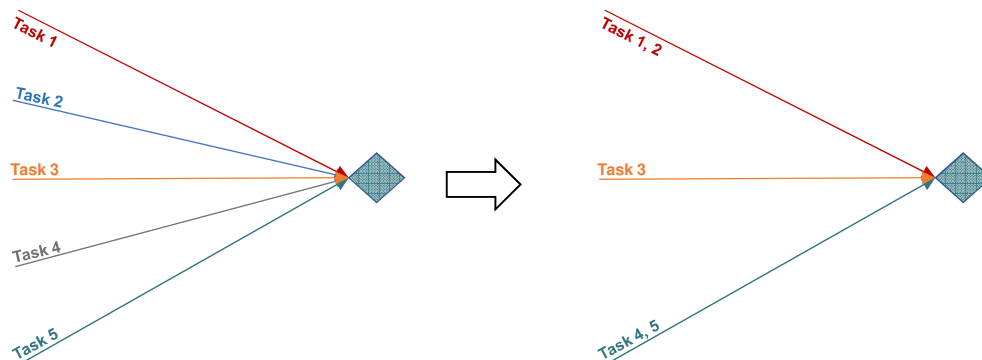
Parts Option 2

Fully stock maintenance station with parts (both must have & "as needed")

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Improving Synchronization

4. FULL KITTING: "Bake-in" synchronization rather than trying to synchronize in real time (reduce dependencies)



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Summary

1. Synchronization is essential for good flow when:
 - There are integration points
 - The workflow involves multiple resources / departments
2. Lack of synchronization can increase cycle times, decrease throughput and worsen quality
3. Synchronization can be improved by the following physical changes:
 - ✓ Controlling WIP (wherever possible)
 - ✓ Implementing a global priority system
 - ✓ Pooling resources (move people to work or vice versa)
 - ✓ Full Kitting (reduce dependencies)

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Utah State Hospital: Synchronization in action

Dr. Madhu Gundlapalli, MD - Former Clinical Director, Utah State Hospital

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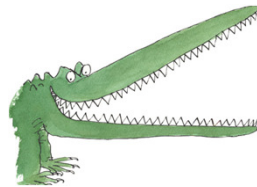
Alligator with Big Teeth

Settlement Agreement:

Utah's Department of Human Services must admit patients court-ordered for restoration treatment at the State Hospital within:

- 60 days from March 31st 2018
- 30 days from September 30th 2018
- 14 days from March 31st 2019

and then must maintain that reduced wait time



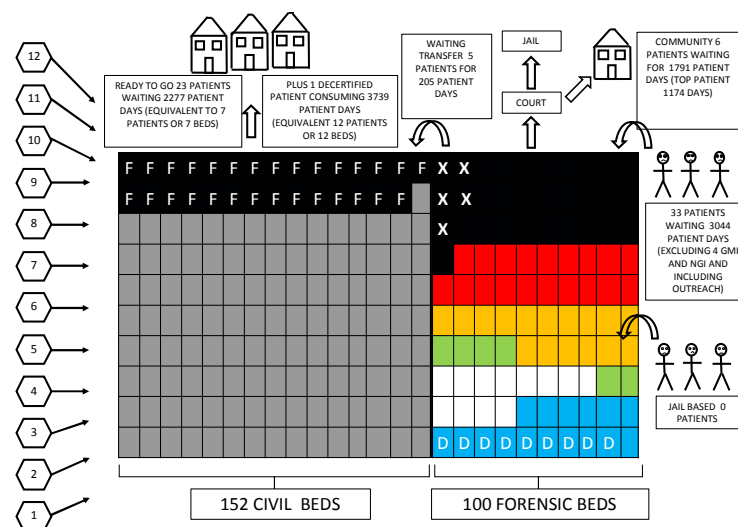
Starting Position:

- 6 month wait for patients accused of crimes and deemed incompetent to stand trial until receiving services
- Wait list for beds was approaching 100 patients

TOC Project started January 1st 2018 – was the first ever implementation of the 'Pride & Joy' approach in a State Hospital Forensic Unit.

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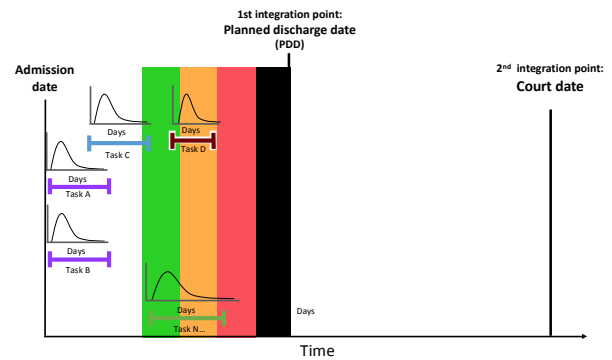
Jan 2018 Situation



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Synchronization Everyone within USH

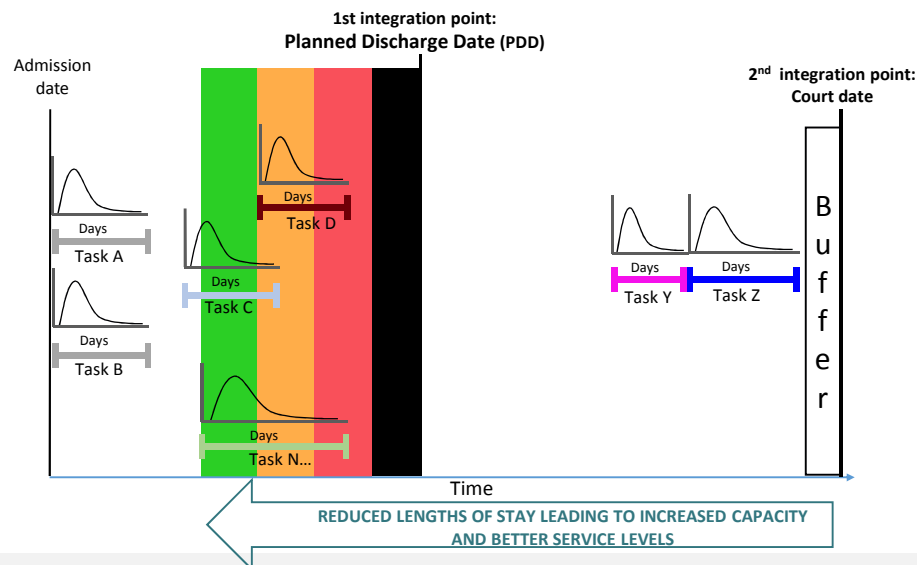
1. Each patient is set a (clinically based, patient centric) **Planned Discharge Date (PDD)** in the 'Pride & Joy' tool based entirely on their clinical recovery NOT the court date.
2. Treatment is conceptualized as a series of tasks that will progress patient to the PDD.
3. Tasks are reviewed at least three times a week and escalated where necessary (cut batching!).
4. Increased focus on both internal & external resources and exposed causes of disruption and delay.



Synchronizing everyone around PDD to create FLOW and relentlessly tackling obstacles to FLOW

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Synchronization USH and Courts



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Tackling Internal Constraint

Identified competency evaluation at USH as a bottleneck:

- Evaluation conducted by psychologists, an important resource and cannot add more psychologists → need to maximize Throughput



1. Reviewed & reassigned any unnecessary tasks
2. One-out, One-in for psychologists (**control WIP**)
3. Patients assigned to “next available” psychologists (**resource sharing**)
4. Created and ensured everything ready before evaluation (**Full Kitting**)

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Tackling External Constraint

There were consistent delays of court dates for ready patients → need to prioritize dates within a window



1. Certification letter reformatted to meet statutory requirements as well as assist the court clerk in scheduling (**enforce priorities**)
2. Ensure transportation order on file & ready to help patient's return to court on time (**Full Kit**)

State of Utah

DEPARTMENT OF HUMAN SERVICES
JOHN SUTHERBERG WILLIAMSON
Executive Director
Division of Substance Abuse and Mental Health
DOUG THORSON
Director
Utah State Hospital
DALLAS L. DANNENFELT
Superintendent

**CERTIFICATION OF COMPETENCY RECOMMENDATION
AND READINESS FOR HEARING UNDER UCA 77-15-6 (17)**

January 1, 2018

The Honorable Judge
District
Address
City, UT Zip

State v. Defendant
Case # Case Number

Dear Judge :

I have reviewed the information in the attached competency progress report by [examiner], the forensic evaluator assigned to review the case. In accordance with Utah Code 77-15-6 (17)(a), I certify that [Defendant] is now recommended competent to stand trial.

State of Utah

DEPARTMENT OF HUMAN SERVICES
JOHN SUTHERBERG WILLIAMSON
Executive Director
Division of Substance Abuse and Mental Health
DOUG THORSON
Director
Utah State Hospital
DALLAS L. DANNENFELT
Superintendent

**ATTENTION JUDICIAL ASSISTANT:
A HEARING MUST BE SCHEDULED ON THIS CASE. THE HEARING MUST BE HELD
WITHIN THE NEXT 15 DAYS. ANY HEARING PREVIOUSLY SET MUST BE
RESCHEDULED TO MEET THIS 15 DAY TIMELINE. (UCA 77-15-6(17))**

CERTIFICATION OF COMPETENCY

Date

The Honorable Judge
District
Address
City, UT Zip

State v. Defendant
Case # Case Number

Dear Judge :

I have reviewed the information in the attached competency progress report by [examiner], the forensic evaluator assigned to review the case. I certify that [Defendant] is now competent to stand trial.

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Results:

Every deadline per settlement agreement has been met:

- ✓ 60 days since March 31st 2018
- ✓ 30 days since September 30th 2018
- ✓ 14 days since March 31st 2019

Wait time – Queue wiped out!

- ✓ Dec.'17 2017 (before impl.): longest wait =168 days
- ✓ July 1, 2018: longest wait = 52 days
- ✓ July 1, 2019: longest wait = 13 days average = 7 days
- ✓ End FY19 = **0 patients on waitlist**

Forensic Referrals:

- ✓ FY 16: 158
- ✓ FY 17: 183
- ✓ FY 18: 176
- ✓ FY 19: 221 (26% ↑)

Inpatients Served:

- ✓ FY 16: 188
- ✓ FY 17: 173
- ✓ FY 18: 205
- ✓ FY 19: 252

Inpatient Length of stay:

- ✓ FY 16: 196 days
- ✓ FY 17: 238 days
- ✓ FY 18: 217 days
- ✓ FY 19: 148 days (32% ↓)

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